Mohsen Nazemi
<MNazemi1@aqmd.gov>
07/28/2006 05:17 PM

To cabrilloportpermit@EPA
cc Amy Zimpfer/R9/USEPA/US@EPA, Gerardo Rios/R9/USEPA/US@EPA
bcc
Subject SCAQMD Comments on the Proposed Cabrillo Port Project Clean Air Act Permit

Attached please find SCAQMD comment letter on the EPA's Proposed Cabrillo Port Project Clean Act Permit. Thanks.

Mohsen Nazemi, P.E.
Assistant Deputy Executive Officer
Engineering and Compliance
South Coast Air Quality Management District
Tel.(909) 396-2662
Fax.(909)396-3895
mnazemi1@aqmd.gov


epacabrilloport72806.pdf

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

July 28, 2006

Ms. Amy Zimpfer
Associate Director
EPA Region 9, AIR-3
75 Hawthorne Street
San Francisco, CA 94105

Subject: US EPA's Proposed Authority to Construct Cabrillo Port Clean Air Act Permit No. LNG-VT-2006-01

Dear Ms. Zimpfer:

The South Coast Air Quality Management District (AQMD) appreciates the opportunity to provide comments on United States Environmental Protection Agency's (EPA's) proposed Authority to Construct Cabrillo Port Permit for construction of a new liquid natural gas (LNG) deepwater port by BHP Billington, International (BHPB) approximately 14 miles offshore of Ventura County. The comments provided below are in addition, and as a follow-up, to the comments and testimony provided by Mr. Mohsen Nazemi, AQMD's Assistant Deputy Executive Officer on behalf of AQMD at the June 5, 2006 Public Hearing held by EPA in Oxnard regarding BHPB's Cabrillo Port Proposed Clean Air Act Permit.

Although Cabrillo Port project is located 14 miles offshore of Ventura County, the project is directly upwind of the South Coast Air Basin (SCAB), and the onshore pipeline associated with this project will be constructed and operated within the jurisdiction of the AQMD. SCAB is the only area in the nation which is considered as Severe-17 Non-Attainment for National Ambient Air Quality Standards (NAAQS) with respect to 8-hour ozone and is also Non-Attainment with respect to NAAQS for both PM10 and PM2.5.

The AQMD believes that General Conformity applies to this project since it is only 15 miles upwind of the SCAB which is Non-Attainment for ozone, PM10 and PM2.5. Therefore, the General Conformity of the Clean Air Act Section 176 (c) should be applied to all project elements. The AQMD is concerned that General Conformity does not address all project direct and indirect emission impacts in SCAB.

The AQMD regulates tens of thousands of natural gas fired pieces of combustion equipment in SCAB. The AQMD is concerned that the quality of natural-gas imported and subsequently supplied to the local pipeline system by the proposed Cabrillo Port Project can result in an increase in NOx emissions. Since NOx is a precursor to ozone and fine particulates, an increase in NOx emission can impede the AQMD's progress in achieving ozone, PM10 and PM2.5 NAAQS.

According to the Natural Gas Council, the single most important gas quality indicator of potential emission and safety impacts in end-user equipment is the Wobbe Index (WI). The WI of natural gas in the South Coast area has traditionally been low. Southern California Gas Company (SCGC) operators have stated that their system average WI is 1,332 Btu/scf. The WI of LNG varies depending on the source, but it could be as high as 1,430 Btu/scf, or 7.4 percent higher than current natural gas. The Natural Gas Council's White Paper, *White Paper on Natural Gas Interchangeability and Non-Combustion End Use*, February 28, 2005, recommends a change of no more than 4 percent in WI from the historical average. Testing conducted by AQMD and SCGC shows that NOx emissions from certain natural gas combustion equipment can increase from 20 to 127 percent with hot (high WI) gas of only 1,400 WI, and result in noncompliance with AQMD's stringent emission limits on stationary combustion sources. This is of concern since NOx is a precursor to ozone and PM10/PM2.5, to attain these health-based air quality standards significant emission reductions are already needed from the existing levels without additional indirect NOx emission increases from the proposed project. AQMD staff has recommended to the California Public Utilities Commission that new LNG supplies to our area be limited to a maximum WI of 1,360, in order to limit the emission impacts of hot gas in SCAB.

BHPB has stated that the LNG they intend to import from Australia would met the WI of 1,360. However, without enforceable permit conditions, importation of LNG with higher WI can not be ruled out. The WI can be reduced by injecting nitrogen into the gas either before or after it reaches shore. Nitrogen injection is being proposed to be used at the proposed Sound Energy Solutions LNG terminal in the Port of Long Beach, in addition to the Natural Gas Liquids Recovery unit, and is used at the Cove Point LNG Terminal in Maryland.

Therefore, in order to avoid NOx increases (which are considered to be indirect emission impacts from the proposed Cabrillo Project) in SCAB and to meet the General Conformity requirements, AQMD recommends that EPA imposes in the proposed Clean Air Act Permit a WI limit of 1,360 for natural gas distributed from Cabrillo Project into the natural gas pipeline.

In addition, although the Cabrillo Project is located outside of the AQMD jurisdiction, because it is upwind of SCAB the emissions impacts are in the SCAB area. Therefore, the emission controls for this project should meet the same stringent standards as applied in AQMD for all equipment and for other mitigations.

The proposed Cabrillo Port project will consist of a Floating Storage and Regasification Unit (FSRU) connected to two pipelines. Equipment that will be installed as part of this project include: 8 submerged combustion vaporizers, 4 dual fueled generator engines, and 4 emergency diesel engines. Following is a comparison of emission controls proposed for this project with the emission limits which would be required for a similar project if it were to be installed in the AQMD.

- **Submerged Combustion Vaporizers (SCBs)**

  Although the proposed VOC and PM10 emission limits meet the same level of emissions required in AQMD, the proposed NOx and CO limits are higher than what is required in AQMD. The proposed NOx emissions from these units are 20 ppm at 3% oxygen averaged over three hours. This will result in annual NOx emission of 48.9 tons per year. In the AQMD, all combustion units with heat inputs similar to these SCVs are required to meet a concentration limit of 5 ppm averaged over one hour. For example, a recently permitted hydrogen reformer also manufactured by Selas Fluid Processing Corp. was required to meet a NOx limit of 5 ppm and an NH3 limit of 5 ppm. In addition, the November/December 2004 edition of "LNG Journal" has an article on lower emission LNG vaporization which states that NOx emission from submerged combustion vaporizers may be reduced to 5 ppm using selective catalytic reduction. Compliance with a 5 ppm limit would reduce NOx emissions by more than 36 tons per year.

  The proposed CO limit of 100 ppm is higher than the CO limits of 50 ppm generally accepted BACT level for combustion units in the AQMD. A 50 ppm CO level would reduce emissions by more than 74 tons per year.

- **Dual Fueled Generators**

  The proposed emissions from these units when using natural gas are similar to AQMD limits. However, in the AQMD emission limits would be based on a one hour averaging time instead of three hours averaging time.

  The proposed 150 ppm NOx limit when the generators use fuel oil is well above the 36 ppm NOx limit that would be required by AQMD Rule 1110.2. In addition, the proposed 3.45 lbs/hr PM10 limit, corresponding to 0.15 g/bhp-hr, is well above the 0.01 g/bhp-hr limit required by California's Air Toxic Control Measure for Stationary Diesel Engines.

- **Emergency Diesel Engines**

  The proposed emission limits for these engines appear to be based on the maximum emissions allowed for a Tier 2 non-road engine of this horsepower

rating. Since not all Tier 2 engines produce the same emissions, the lowest emitting Tier 2 engine should be used for this project.

Therefore, AQMD recommends that EPA incorporates all air quality related emission standards and mitigations into the proposed Clean Air Act Authority to Construct Permit. That is in order to ensure all direct, as well as indirect, project emission impacts including emissions associated with the equipment located on the FSRU, on-shore equipment and emissions associated with support vessels and LNG carriers during transport in coastal waters and while unloading at FSRU are offset or mitigated, all emission standards and any mitigations proposed need to be incorporated into the Clean Air Act Permit through enforceable permit conditions.

Thank you again for the opportunity to comment on the proposed Authority to Construct for the Cabrillo Project. If you have any questions, please contact me or Mr. Mohsen Nazemi at (909) 396-2662.

Sincerely,

Kurt R. Wiese, District Counsel

KW:MN:ph

cc: Deborah Jordan, EPA
Mike Schieble, CARB
Barry Wallerstein, AQMD
Carol Coy, AQMD
Chung Liu, AQMD
Mohsen Nazemi, AQMD

(cabrilloportwiese72706)